

Amendment and Response

Applicant: Zheng, Guo-Hua

Serial No.: 10/817,643

Filed: April 2, 2004

Attorney Docket No.: CGL02/0474US01

Title: DIETARY FIBER CONTAINING MATERIALS COMPRISING LOW MOLECULAR WEIGHT GLUCAN

REMARKS

The following remarks are made in response to the Final Office Action mailed March 2, 2009. Claims 24 and 25 have been previously withdrawn from consideration. Claims 1-5, 10-23, 32 and 53 were rejected. With this Response, claims 2 and 11 have been cancelled and claims 54 and 55 have been added. Claims 1, 3-5, 10, 12-23, 32, and 53-55 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 112

Claims 1-5, 10-23, 32 and 53 have been rejected under 35 U.S.C. §112, ¶2 as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicants regard as the invention.

The Examiner states that concerning claims 1 and 32, the term “highly stable” is indefinite because it is not known what would be considered as highly stable and that the term is relative. The Examiner further states that the specification defines “little to no precipitate” but questions what would be considered as little precipitate. The Applicants respectfully disagree with the Examiner’s statements. In order to expedite prosecution of the application, however, Applicants have deleted the term “highly” from claims 1 and 32.

Applicants, therefore, respectfully assert that these rejections under 35 U.S.C. §112, ¶2 should be withdrawn.

Claim Rejections under 35 U.S.C. § 103

Claims 1-5, 10-23, 32 and 53 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application No. 2003/0154974 to Morgan (“Morgan”).

The Examiner states that Morgan discloses a fiber composition having the molecular weight as claimed. The Examiner further states that although Morgan is silent with respect to the

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viscosity, the protein content, the fat content, the percent of beta glucan and the flavor intensity, the fiber composition in Morgan is prepared by substantially the same method as disclosed and the composition has a molecular weight within the range claimed thus it would be obvious that the composition of the claimed invention will have the same viscosity, protein, beta glucan and flavor intensity as claimed. The Applicants respectfully disagree with the Examiner's statements.

Claim 1 recites a dietary fiber composition isolated from a cereal grain containing β -glucan, comprising: a β -glucan composition having a weight average molecular weight ranging from about 50 kDa to about 250 kDa, wherein a 1% mixture by weight of said dietary fiber composition and water is stable and has a viscosity of about 1500 cps or less, and wherein the dietary fiber containing material has a protein content of from about 1% to about 3% by weight. Claims 3-5, 10, and 12-23 depend either directly or indirectly from claim 1.

Claim 32 recites a composition, comprising: a β -glucan composition in amount sufficient to lower LDL-C, wherein said β -glucan composition comprises a β -glucan compound having a weight average molecular weight less than or equal to about 200 kDa and wherein said β -glucan composition has a viscosity less than or equal to about 100 cps, and a 1% mixture by weight of said dietary fiber composition and water is ~~highly~~ stable and has a viscosity of about 1500 cps or less, and wherein the dietary fiber containing material has a protein content of from about 1% to about 3% by weight.

The Examiner contends that Morgan is silent with respect to protein content, however, Morgan specifically reports removal of protein and in fact characterizes protein as an impurity and states that it is preferable to remove it. *See* [0024] and [0053]. Morgan further provides several methods that can be used to remove such protein. One method involves heating the aqueous solution to above about 70°C causing the protein to precipitate which can then be removed by filtration or by decanting or by centrifugation. *See* [0024]. Another method involves removal of protein through the addition of a protease to the aqueous solution followed by

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ultrafiltration of the degraded protein. *See* [0025]. As one of skill in the art would recognize, protease is a protein degrading enzyme. Still another method employs addition of a flocculant such as carrageenan, for example κ -carrageenan. *See* [0025].

In stark contrast, the present invention does not call for the removal of protein by any of the methods reported by Morgan and in fact claims a range of protein content of from about 1 3% by weight. New claims 54 and 55, also recite a protein content at an even higher at a range of from about 7-10% by weight. Thus, contrary to the Examiner's assertion, the fiber composition of the present invention is not prepared by substantially the same method as Morgan as demonstrated by the protein purification steps. Moreover, even if the composition has a molecular weight within the range claimed it would not be obvious that the composition of the claimed invention would have the same properties as Morgan. This is demonstrated in at least one respect by the removal of protein by Morgan.

Further, Morgan actually teaches away from the method present invention by its removal of protein and by providing such a large variety of methods to do so. Morgan also teaches away from the present invention in the use of an arabinoxylan degrading enzyme to degrade any arabinoxylans present. *See* [0027] and [0047]. The present invention does not call for or in any way mention the removal of arabinoxylans. For at least these reasons, one of skill in the art would not be motivated to employ the method of Morgan to achieve the claimed invention.

The Examiner also states that the characterization of a substance as imparting texture is a subjective evaluation that can vary among individuals and that how the β -glucan is evaluated is a subjective interpretation and not a patentable distinction. The applicants respectfully disagree with the Examiner's statements. In order to expedite prosecution of the application, however, Applicants have deleted the phrase "neutral, non-lubricious mouthfeel" from claims 1 and 32. Likewise, although the applicants maintain that one of skill in the art would know that Morgan's

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fat-containing β -glucan composition would not be stable in water, applicants have deleted the term "highly" from claims 1 and 32 in order to expedite prosecution of the application.

Accordingly, applicants respectfully submit that claims 1, 32, 54, 55 and claims dependent therefrom are not obvious over Morgan, and request that the rejection be withdrawn.

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Conclusion

In view of the above, Applicant respectfully submits that pending claims 1, 3-5, 10, 12-23, 32, and 53-55 are in form for allowance and are not taught or suggested by the cited references.

Applicants hereby authorize the Commissioner for Patent to charge Deposit Account No. 50-2342 in the amount of \$220.00 to cover the fees as set forth under 37 C.F.R. 1.16(h)(i).

The Examiner is invited to contact the Applicant's representative at the below-listed telephone number to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Gretchen Pesek Skarohlid at Telephone No. (942) 742-2571. In addition, all correspondence should continue to be directed to the following address:

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Respectfully Submitted,

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/Gretchen Pesek Skarohlid/

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